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COVER: Detail of a Turkish Carpet, Northwest Anatolia, late 16th or 17th century, Textile Museum 1976.10.1. Purchase, Arthur D. Jenkins Gift Fund and Proceeds from the Sale of Art. (See Figure 1 in "A Turkish Carpet with Spots and Stripes" by Louise W. Mackie.) Transparency by Raymond L. Schwartz.

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PATOLU AND ITS TECHNIQUES

MARY GOLDEN DE BONE

INTRODUCTION

In 1903 Sir George Watt, Director of the Exhibition, wrote in the Official Catalogue of the Delhi Exhibition:

"Patola Silks—One of the most beautiful and at the same time most interesting of all Indian Textiles is that of the patola silk or wedding sari of the people of Gujarat. This lovely textile has curiously enough escaped the attention of most writers on Indian Art Manufactures."¹

Times have not changed much. Very little has been added to the literature documenting the process of this remarkable fabric. While authors have captured the aesthetic qualities of the patolu in print, a comprehensive documentation of the actual process of weaving the patolu is still wanting.

Since I am a weaver curious about the processes involved in weaving a double ikat fabric, I would assume that there must be other weavers like me who would wish to see a documentation of this procedure. Therefore I addressed myself to the task of learning the patolu technique. Under the auspices of the University of California Berkeley Professional Studies Program in India I visited the Salvi family of Patan in North Gujarat on three separate occasions during the academic year 1974-75 and recorded the many activities involved in producing a patolu. Since the Salvis usually have three or four patolu warps, and many processes going simultaneously, I did not see a patolu made from beginning to end in a step by step procedure. But Mr. Chhotolal Salvi and his family were considerate to insure that I saw all of the processes of patolu making. They kindly answered all my countless questions, and helpfully reconstructed the sequential procedures involved in patolu weaving.

DESCRIPTION

A patolu is a double ikat woven textile. It is the traditional silk wedding sari of Gujarat.

The technique employed in weaving a patolu is tabby, or plain weave, the most elementary of all weaves. The art of the ikat process lies in the tying and dyeing of the warp and weft threads before the weaving begins. Actually, the warp and weft threads are separately tied, untied, retied, and dyed in order to achieve the five or six colors that, when woven together, will form the proposed design of the fabric. In the ikat process the yarn areas which are to be reserved in the dye bath are tied or bound with a resist preventing the dye from totally penetrating that part of the yarn.

A unique feature of double ikat textiles is that both sides of the cloth have equal intensity of color and identity of design. Another feature is the slight blurring of the designs in both directions—warp and weft—which gives this cloth its most recognizable characteristic.

Natural dyes were used exclusively for patola (plural of patolu) up until one hundred years ago. After synthetic dyes were introduced, natural dyes were used occasionally, but only when a patron demanded them, and not within the last twenty years.

Today the cost of a patolu ranges from Rs. 3,000 to Rs. 5,000 (approximately \$375 to \$625) depending on the length and width of the sari, the number of colors used in the design; a new design for example requires additional labor. Formerly saris were five yards long, now they are six yards long and forty-eight inches wide. The weavers adjust the length and width according to the desires of the customer. Increases in both the cost of labor and materials have raised the price of a patolu, labor more than materials.

These days customers come from wealthy Gujarati families living in Ahmedabad, Baroda, Bombay, Calcutta and Madras. They generally purchase patola for marriage purposes. The bride may wear the patolu for the actual wedding ceremony, or she may prefer to wear it during the wedding reception. The patolu sari is usually presented to the bride by her parents as a gift since the custom in India is for the parents to present many saris and ornaments at that time.

Saris are usually ordered about six months to one year in advance. Most patola take from six months to a year or more to complete, depending on the design and other factors. Usually a warp long enough for three

sari lengths is placed on the loom in order to prepare both the commissioned sari and two others available for sale. However, sometimes all three lengths are ordered saris.

At one time it was considered fashionable to own a patolu with several inches of gold thread woven into the *pallu*, which is the decorative end of the sari. The weavers will still provide this gold border on request, but they prefer not to because the gold thread tends to pull in the edges of the selvedge and to pucker the silk cloth. One of the reasons there are so few old patola around today is because many of them were burned in order to reclaim the gold.

HISTORY

The Salvis have been weaving patola for generations. The surname Salvi, which means somebody who works at a loom, defines their caste and identifies them as weavers.

There are several legends about the origins of the Salvi family. Chhotolal Salvi maintains that they originally came from the Deccan in Jalana near Aurangabad. He says that King Kumarpal brought seven hundred Salvi families to Patan in the eleventh century so that the king might have a new patolu every day.

Besides Patan, silk double ikats are also made in Andhra Pradesh and Orissa. The latter two states also produce cotton double ikats whereas the Gujarati patolu of Patan is always made of silk.

Men and women alike share in the activities of the patolu manufacture. Women skein, twist, wrap, dye and weave just as men do. When a man of the Salvi family marries, the wife becomes a member of their extended family, and is then taught the various processes and skills. It takes five years of practice before a person is considered to be skilled in making patolu. Some of the weavers at Patolu House have been weaving for two or three years. These are the younger members of the Salvi family who appear to take a great interest in matters of patolu weaving. Also they are proud of their family's skills and the fact that their art is appreciated all over the world.

It is debated whether patolu weaving originated in India or Indonesia, or whether it originated independently in both places. Although the word ikat is of Indonesian origin

many scholars believe that knowledge of the ikat technique was brought from Gujarat to the Malayan Archipelago just as the art and religion of India came to Indonesia.

In this regard, Sir George Watt wrote in 1903:

"It would appear that these silks have for centuries found their way to Java and are there, just as in Gujarat, used as special bridal garments. Owing to being expensive and the difficulty of procuring them, they are handed down from mother to daughter and are never worn except on the wedding day. This very curious transportation of an artistic fabric and of its associations from one country to another is doubtless a consequence of the former close association of Java with the west coast of India. And it also goes to confirm the impression already conveyed of the antiquity of the art of patola dyeing and weaving."²

Despite the controversy of the origins of patolu weaving, the fact is that the Patan patolu was and still remains the triumph of the Indian dyer/weaver's skills.

DESIGNS

The motifs used in patola are derived from everyday nature—flowers, tree leaves, and animals, and also from household environment objects such as ropes and baskets—but they have no particular meaning other than being representational.

The designs are essentially traditional although new designs are occasionally utilized. Customers seem to prefer the old, traditional designs, especially *Nari-kunjar*—doll-elephant in a lattice pattern, *Pan Bhat*—pipal leaf design resembling a heart, and *Nav Ratna*—nine diamonds.

The designs on a patolu sari are numerous: there is the usually complex ground or body pattern, another pattern on the *pallu*, a different design on the borders, and stripes of various colors and size going warppways and weftways separating the ground design, borders, and *pallu*. The compelling charm of the patolu lies partially in the complexity of the overall design, which equals the intricate attractiveness of an oriental carpet. This complexity of design plus the subtlety of color blending achieved by the ikat technique makes the patolu a supreme textile.



Fig. 1 Winding silk onto a *parti*.

PATOLU PROCESS

Preparing the Silk for the Warping Pegs

The Salvis purchase the silk they weave. Originally it came from China, but now it comes from Japan via Bombay. At one time they used Bangalore silk, but it was not considered to be as satisfactory as the imported material. Japanese silk, from the *Bombax mori*, is far superior to the Indian variety. It is whiter, stronger, and is a smoother thread. Indian silk is found during the weaving process to become slubby, while Japanese silk holds up better under the strain of weaving.

The raw silk, as it is received from Bombay, has been reeled to a thickness of seven filaments, that is, a strand contains single filaments from seven separate cocoons. The size of the original silk thread of seven filaments is twenty or twenty-two denier weight.³

The silk is received in twisted skeins. It is placed on a swift and reeled onto eight *partis*,⁴ one at a time (Fig. 1). If the thread breaks during this process, the woman reeling the thread repairs the break by knotting it in her mouth with her tongue and so avoids having to free her hands to make the knot in the usual way. The threads on the eight *partis* are then plyed into one thread. Thus the strand used for warp and weft in the patolu consists of fifty-six filaments. The warp and the weft are of the same weight thread; they have the same ply and the same twist.

The silk is then washed in water and washing soda to degum it. Washing also whitens it. Then the silk is wet-reeled onto reels. The reels are attached to an electric twisting machine, called a *rentiya* by the Salvis, and

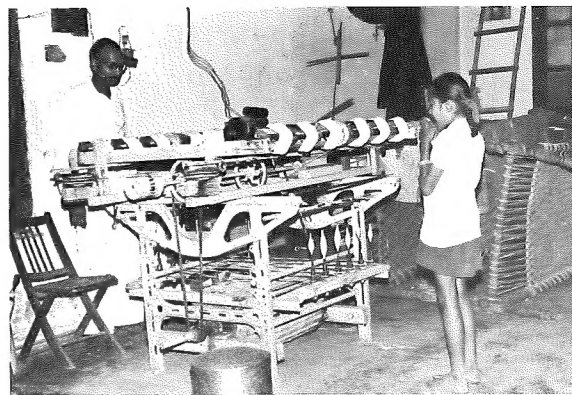


Fig. 2 The *rentiya* (twisting machine).

given a slight twist to unite the eight plys and to give the threads more tensile strength (Fig. 2). The *rentiya* is capable of twisting twelve reels of silk thread separately at the same time. Before the Salvis had this electric device, this work was done on a hand operated *charkha*.

The Warping Process

Now the silk thread is ready to be stretched onto the warping pegs. Before any process which involves handling the silk, hands are sandpapered to make them smooth. Usually a warp is made to be twenty yards long. This is enough for three six-yard saris and two yards of loom wastage. The width of a sari which is 48½ inches contains from 2500 to 2800 warp threads. However, separate warps are usually made, one for the ground pattern and others for the borders. There are also several wefts stretched on the pegs since the *pallu* and end border will differ in design from the ground pattern. From forty to forty-five picks to the inch are calculated for the weft threads. Exact calculations are made for the job at hand before the threads are wound onto the pegs.

Usually the warp is made twelve ends at a time. The yarn is on twelve reels placed on the floor. The silk threads on each reel are threaded through twelve rings attached to a bar on the ceiling and then through twelve rings of a raddle which the person warping holds in one hand. The other hand guides the threads onto the appropriate warp pegs. One cross is made at the top end and four crosses at the bottom end of the warp (Fig. 3).

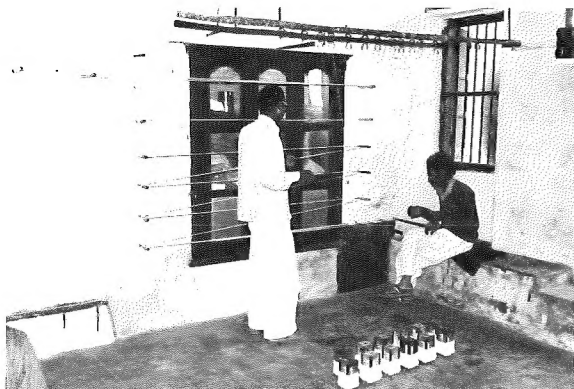


Fig. 3 Winding a warp from twelve reels onto the warp pegs.

Since the threads are warped twelve at a time they have to be crossed individually at the four crosses at the bottom end of the warp. To facilitate this procedure two pegs are short, three pegs are long. After the warper puts the twelve threads around the five end warp pegs, another person arranges the threads in four crosses of one thread over, one thread under and so on until each thread is individually crossed (Fig. 4). When the entire warp is on the pegs, the five crosses are then secured by tying them.

The warp is removed from the pegs and is then wound around the first two top pegs plus one other peg which is placed above the regular warp pegs. The end of the warp with the four crosses goes around the pegs last. The warp is then secured by tying a cord through the end loop and to the beginning threads.

Folding the Warp and Weft in Preparation for Tying

The folding and sectioning of the warp and weft are determined by the dyed pattern to be applied. The number of folds and sections depends on the design. At Patan, for instance, I observed the folding of two warps; one was folded eight times and the other ten times.

This is probably the least understood and most confusing technique in the entire procedure of patolu weaving. According to Chhotolal Salvi, a twenty-yard warp is folded lengthwise into eight parts, one layer laid on top of the other. Then the folded eight layers of warp are folded twice again, only this time the folds are widthwise so that the length of

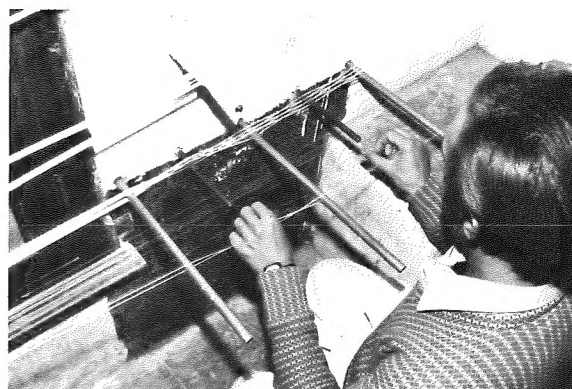


Fig. 4 Arranging the four crosses at the end of the warp.

the warp becomes eight yards. Poles are inserted into the folded warp and it is stretched in preparation for tying the resists.

The warp I watched the Salvis fold was not for three saris but for eight borders. When a warp and a weft are prepared they are not for an entire textile. Separate warps are prepared for borders and separate warp for ground areas, and they are not brought together until they are stretched on the loom. A sari may have as many as three or four borders on each side. Wefts also are prepared in sections, i.e., ground area, *pallu*, and end border.

This warp consisted of approximately 1200 threads, or ends. Each border will be about three inches wide. The warp will be threaded at approximately fifty ends per inch. It will be twenty-four inches wide when it is spread out.

The warp is stretched its full twenty-yard length and secured to tensioned bars at both ends and lease sticks⁵ are inserted at the crosses.

In order to achieve the eight layered folds which arrange the warp into bundles of symmetrically grouped repeats of the intended motif, a long, thin, pliant rope with other cords coming off at ninety-degree angles is used to separate the warp threads into sections. One end of the rope is attached to a tension bar, the other end of it is lined up and attached to the outside warp threads. The eight groups of warp threads each have separate ties through their respective crosses. A predetermined number of threads from each of the eight groups are moved to the right and

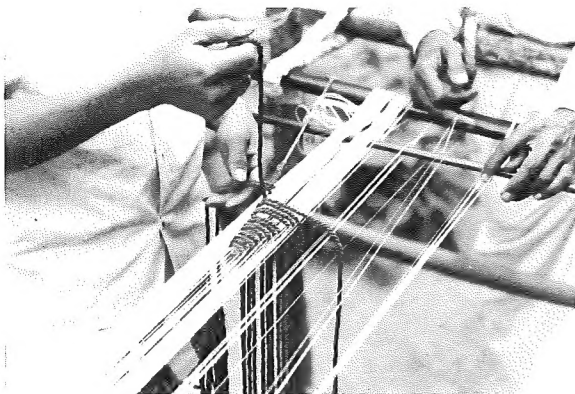


Fig. 5 Inserting sectioning cords to separate the warp into bundles.

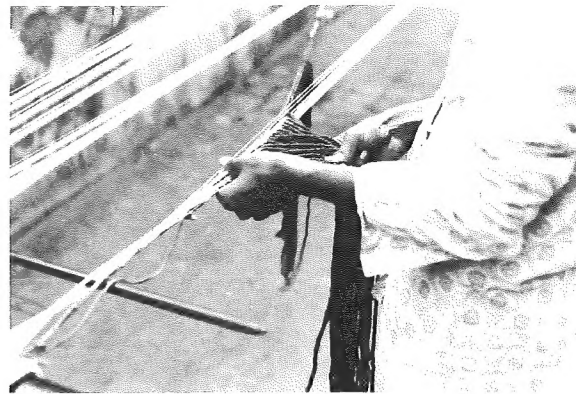


Fig. 6 By flipping the sectioning cords over towards oneself, the warp threads are layered into symmetrically grouped repeats of the intended design.



Fig. 7 Folding the warp into three layers of six yards, six yards, and eight yards each.

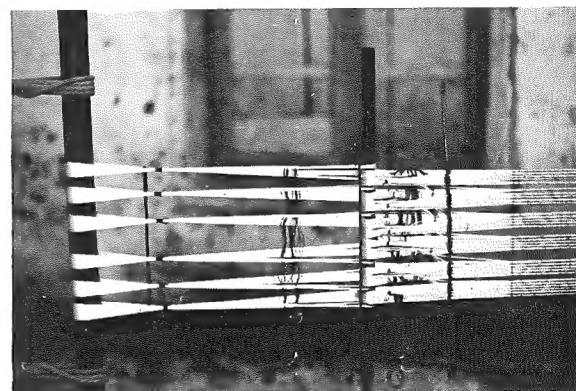


Fig. 8 The folded warp stretched in preparation for tying.

separated by the sectioning cords. After all the warp threads from the eight parts are separated by the sectioning cords, the cords are flipped over (Figs. 5 and 6). The warps are tightly tied (choked) in four bundles at six

yard intervals. The rope and cords are then removed from the warps after the sixteen separations are threaded. The warp is removed from one end stick; it is then adjusted in the warper's hand and retied in four sections at the cross at the end loop, thus making eight sections. The warp tension is relaxed, and it is folded in two places making three widthwise layers (Fig. 7). The warp is now ready to be stretched on the frame, laced, and tightly secured (Fig. 8) for wrapping and resists.

Applying the Resists and Dyeing

The warps and wefts are tied onto their respective frames. As previously noted the warp is now stretched to an eight yard length, and the weft is stretched on frames to 48 ½ inches, the exact size it will be on the loom.

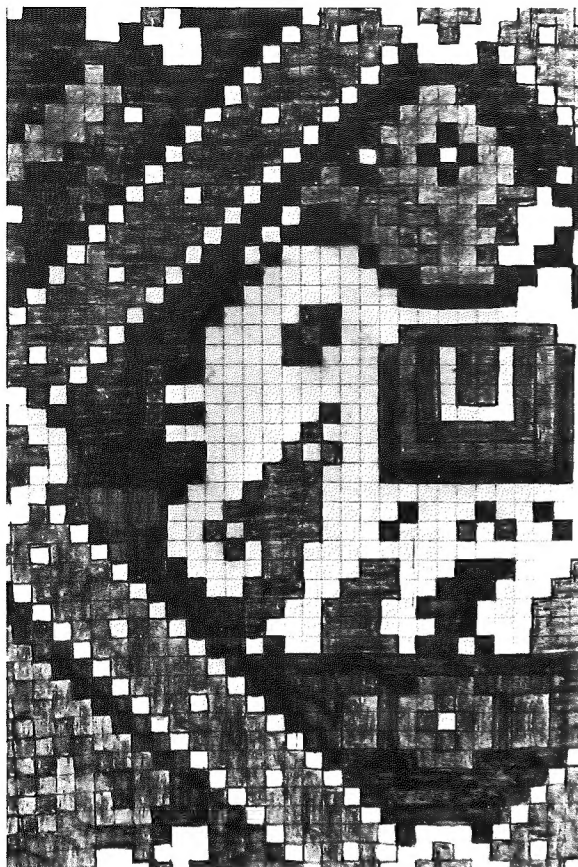


Fig. 9 Graph paper design (Nari-Kunjar—dollephant in a lattice pattern).

The Salvis have many old graph-paper drawings of the traditional patolu designs (Fig. 9). They are tucked away in boxes and seldom referred to since all those who work on the patolu warps and wefts seem to be very familiar with the designs and do all of the processes from memory.

Now the sections of the warp and weft which are to remain undyed have to be reserved; this is achieved by wrapping those parts of the yarn with cord or string and thereby protecting those sections against penetration of the dye. Starting from the right hand stretcher bar and working to the left, the threads are marked vertically with a charcoal-coated string at approximate distance of one centimeter (Fig. 10). These vertical charcoal marks on the warp and weft threads seem to be all the Salvis need to tie the designs. The ties are made with a fine double ply cotton cord. The bundles are wrapped tightly and knotted with a halfhitch at the left end of the

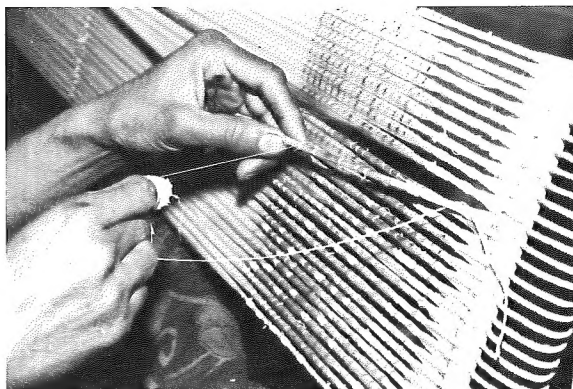


Fig. 10 Tying the resists.

wrap, and then the end of the cord is snapped off close to the knot. The number of threads in each bundle is determined by the number of repeats desired.

Traditionally, the colors most used in the patolu are six: white, yellow, red, parrot green (yellow green), peacock green (blue green), and black (reddish black). These six colors are achieved from only three dye baths, red, yellow and green, in that order. The first areas to be tied will cover the parts of the yarn which will remain white and those areas which will later be dyed yellow and green. This leaves the areas to be red and black exposed to receive the first dye. After the yarn is dry the sections which will be yellow and parrot green are untied. The red areas are not tied at this point as one would imagine, since the yellow dye does not noticeably change the red color. Again the yarns are left overnight to dry after the yellow dye bath and then they are restretched. Next, those areas are untied which are to be peacock green, and the parts to remain red and yellow are retied in order to retain these colors. Then the threads are immersed in the green bath. The untied white turns peacock green and the untied yellow turns parrot green. Also, those red areas which were not retied turn a reddish black color.

As mentioned above, after the warp and weft threads are tied and dyed, portions of the wrapped threads have to be untied in order to overdy. The yarn is stretched on racks as it was for the original tying, and the ties are removed with the aid of a pointed instrument which resembles an icepick (Fig. 11).

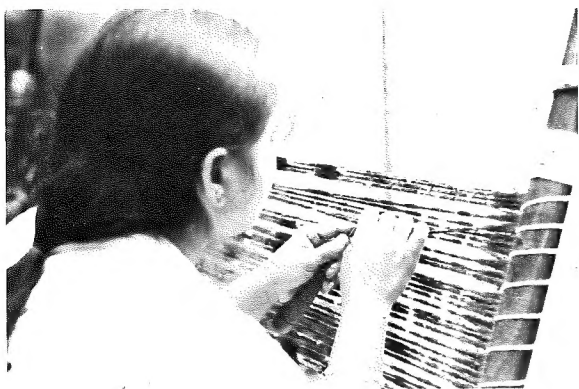


Fig. 11 Untying the resists.

When a large area has to be reserved, it is wrapped with strips of cotton cloth rather than string.

Before the yarn is dyed it is left soaking in cold water for a day or two so that the fibers will absorb the dyes evenly. It is necessary to rub the yarn by hand rather vigorously to get the fibers wet enough. One need not be concerned about the cotton wraps becoming untied because the cotton wrapped around the silk gets much tighter when it is wet.

Unfolding the Warp and Weft: The Warp

After the yarn has been subjected to all three dye baths, all the cotton wrappers are removed. The first step in spreading the yarn out is to separate the back layer from the front as it is stretched on the bars. This is achieved by simply running one's hand in between the layers from one end to the other. At this point the stretcher bars are removed. There is no tension on the yarn now, just the numerous cross-ties keeping the threads in order. Then the wrappers on the end of the warp are untied leaving a white mark across that part of the warp which is dyed solid red—the end of the warp which will not be woven. The large cord cross-ties where the warp was folded widthwise are untied and removed. The warp which was folded into three layers is straightened out to its full twenty yards and is stretched onto bars spread twenty yards apart. Where and how the lease sticks are now inserted in the warp is determined by the sequence of the cross-strings which were tied to secure the warp layers when it was originally folded. At this point the warps are separated or “unstuck” from each other.

During this procedure six people work on the warp at the same time, one holding the sticks, two separating the warp at strategic points with their hands, two making the ties, another untying, and so on. It would not be possible to do this work unless there were from six to ten people working as a team at all times to go through the procedures involved in weaving a patolu.

Warp threads invariably break throughout this procedure and work must be interrupted to repair the break. Mr. Salvi keeps a few spare lengths of tie-dyed thread in his shirt buttonhole in anticipation. But, since silk stretches, it is sometimes not necessary to use a supplementary length to repair the broken thread.

After all the threads have been spread out and are separated by an original cross-tie, the borders of the warp are added to both sides (Fig. 12). They are prepared as the warp has been previously. First, the outside narrow white borders and then red borders are added to both sides of the warp; these borders are then incorporated into the crosses. Finally, the warps are tightly tied in small bundles (Fig. 13) and removed from the tension frame at one end and wound onto a stick (Fig. 14).

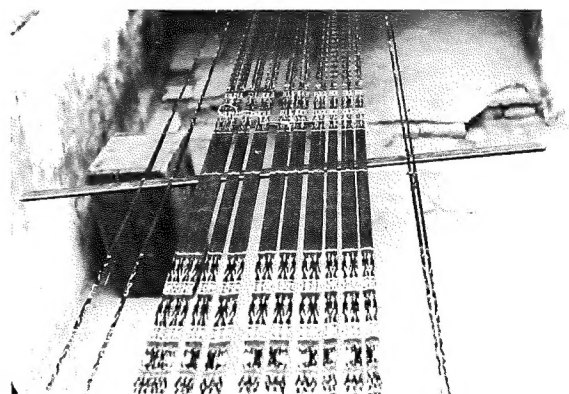


Fig. 12 The warp after it has been spread out and the borders have been added.

Unfolding the Warp and Weft: The Weft

For a three-sari warp, several wefts are made for the ground area design, one for the *pallu*, and one for the end border.

The wefts are stretched, in this particular weft, in four layers. Each layer is separat-

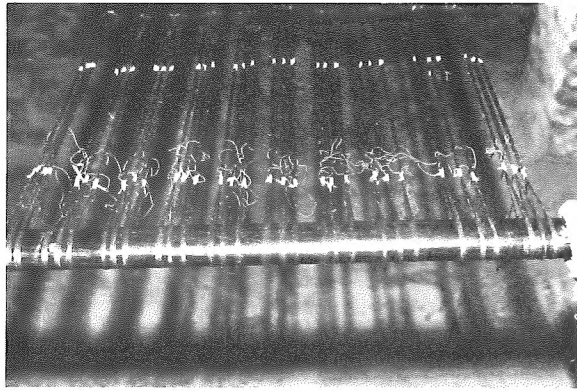


Fig. 13 The warp tied tightly into small bundles.

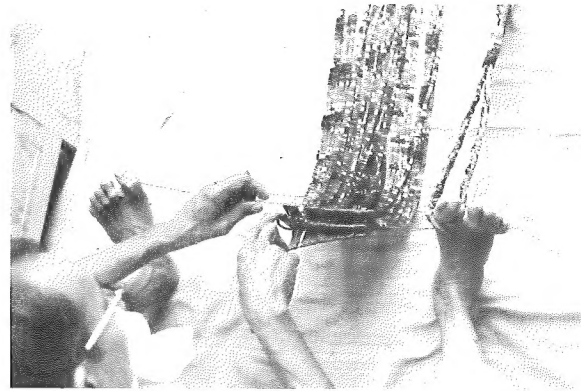


Fig. 15 Separating the weft layers.



Fig. 14 Chhotalal Salvi winding the unfolded warp onto a stick.

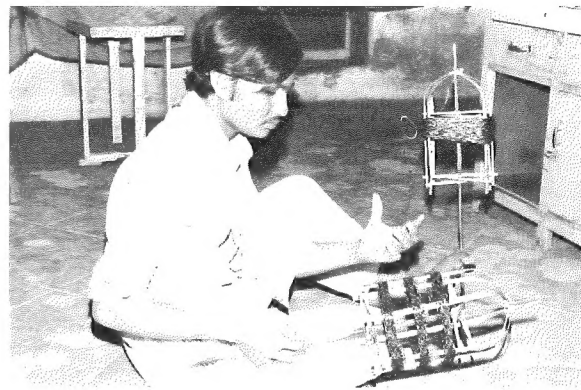


Fig. 16 Separating six threads into three pairs.

ed by a cross-string. When the wefts were prepared for tie-dyeing, a cord was tied through all four layers taking a small section from each of the four layers. This process was repeated until all the four layers were united vertically into one layer.

After the weft was dyed and untied, it was unlaced from the stretcher bars. Now, two people hold the wefts, stretching the end ties on their toes while they untie and remove the cords which united the four layers tied through each end, thus separating the four layers.

When the top layer is separated from the three bottom layers it is twisted to the right over Mr. Salvi's right big toe (Fig. 15) and the helper's left big toe. The next layer is separated, twisted, and placed over the same toes on top of the previously twisted layer, until all four layers are separated.

After they are separated the end ties are untied, separating each layer completely from the other. These separate layers of weft are skeined into four units and kept for the next process.

When the wefts were originally made they were stretched on the warp pegs six threads together. Now those six threads of the same dyed pattern are reeled onto a *parti*. Then the ends of these six threads are separated into three pairs and reeled again onto another *parti* (Fig. 16). After this procedure the three pairs are separated one section at a time so that two separated sections are reeled onto yet another *parti*, leaving two sections of pairs on the *parti* from which the threads were being reeled. Subsequently these will be separated also. After the threads are separated into six individual sections they are ready to be reeled onto bobbins.

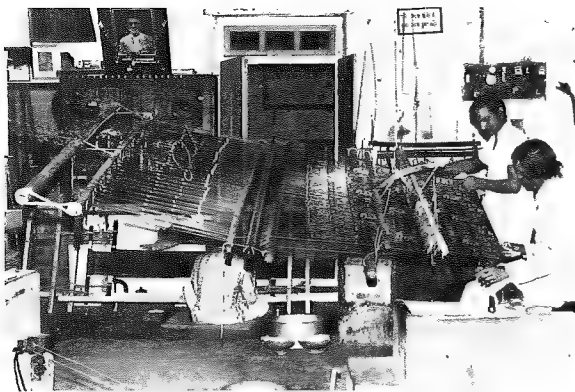


Fig. 17 A view of the loom and the weaving area.



Fig. 18 Tying the warp onto the clothbeam.

Preparation of the Loom

The loom used for weaving patola is a single-harness loom, having no rigid framework, and giving only two sheds. It consists of seven wooden or bamboo poles, a tension rope and a single hand operated harness (Fig. 17). The heddles have no heddle-eyes; they are simply string heddles through which every other warp is threaded. It operates on the same



Fig. 19 Attaching the back warp pole to the ceiling.

principle as the rigid-heddle loom one makes from popsicle sticks and tongue depressors.

The loom is actually reconstructed for each new warp. The front end of the warp is first slipped around a thin, but sturdy, stick attached by ties to the clothbeam. The width of the clothbeam is measured against a length of weft pattern thread; then the warps are spread out on the stick and tied to the desired width (Fig. 18). The stick is then tightly laced through holes in the clothbeam, using a halfhitch from right to left. At the other end, the warps are stretched out over a pole attached to another pole (Fig. 19) which is held up by a tensioned rope which is attached to the ceiling. The warp is stretched out approximately twelve feet, and the surplus is wrapped around a stick suspended from the ceiling over the back end of the stretched out warp. The warps were prepared with four cross-strings. Additional poles are inserted into the warps, maintaining these crosses

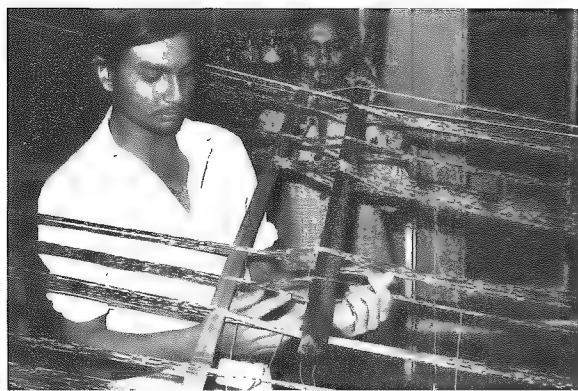


Fig. 20 Inserting the raddle at the cross.



Fig. 21 The wooden tool which is used for making heddles.

(Fig. 20). Then the strings holding the crosses are untied.

The heddles are made from one continuous element of nylon seine cord. First, the cord is passed through the width of the warp just in front of the first cross. The heddles are made around a smooth wooden tool (Fig. 21). Moving from left to right the first loop is tied, then several other loops are made for extra heddles. After the first tie, the heddles are not tied at the top but simply looped around the wooden tool, picking up every top thread of the warp in front of the cross. When quite a few heddles are wrapped they are slipped off the left side of the tool, twisted, and tucked under the top warps at the cross (Fig. 22).

After the heddles are made through alternate warp threads, a heddle bar is slipped through the heddles from right to left (Fig. 23). Then the bar is raised and tied into position from strings coming down from the ceil-



Fig. 22 Groups of heddles tucked under the warp threads.

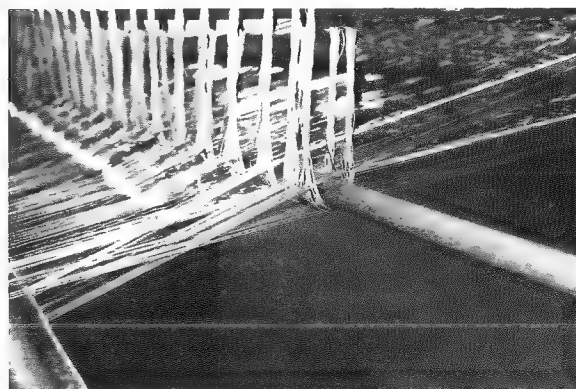


Fig. 23 The first top heddle bar inserted through the heddles and the bottom bar in its temporary position.

ing. The heddles are straightened from right to left making sure none are tangled or crossed.

Another heddle bar is wrapped in wet cloth and inserted through the heddles. The wet cloth wrapped and tied around the bar holds the strings firmly in place. After it is inserted, it is raised up above the original bar. Then

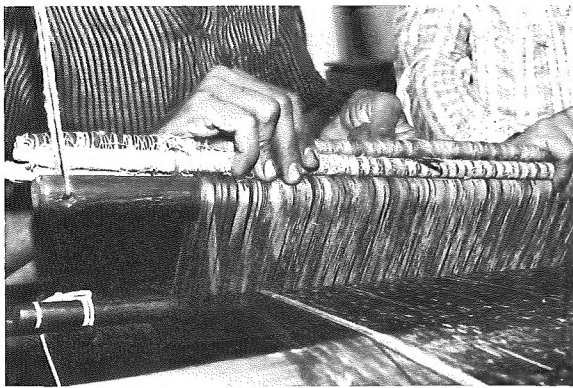


Fig. 24 Stitching the four top heddle bars in place.

two other cloth bound bars are placed on either side of the two bars. These four bars are held tightly in place and are stitched together with a large needle and heavy cord in a wide halfhitch across the length of the bars (Fig. 24).

During the process described above the bottom heddle bar was inserted over the warps that are attached to heddle strings and under the unattached warps (Fig. 23). Also the shed stick was inserted in the warp and temporarily laced to the bottom heddle bar in three places, at both ends and in the middle, in order to hold everything in place. Now the shed stick is untied and the bottom heddle bar is taken out and reinserted to lie atop all the warps.

After the heddle bars are all in place, the *lungi*, which is a lever attached to the center of a long pole, is put into place. The *lungi* is fastened by a cord hanging from the ceiling and another cord threaded through the top three heddle bars (Fig. 25). When the *lungi*

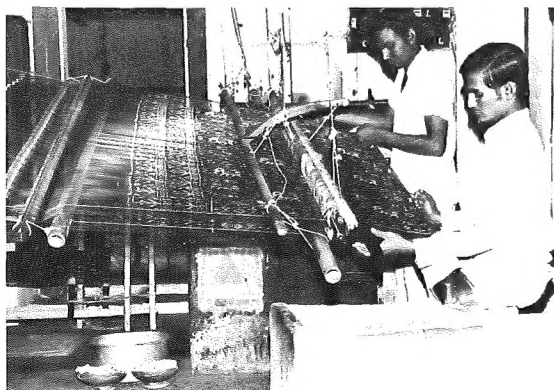


Fig. 25 A view showing how the *lungi* is attached to the harness, shed roll, and ceiling.

is pushed down it raises the heddle bars up, pushing the warps, which are unattached to the heddles, down and creating one shed. Then, when the *lungi* is released the heddle bars drop, the shed roll comes forward causing the unattached warps to raise, thus creating the other shed. The bottom heddle bar floats freely, lying on top of the warps of either shed.

The shuttle is a hollow piece of bamboo approximately one foot long, open at one end and closed at the other end except for a small hole (Fig. 28). Enclosed in the hollow bamboo is an aluminum pirn (bobbin) cut from aluminum pipe. At one time weavers used a small bamboo stick, but the aluminum piping works better and does not break or wear out. The aluminum pirn, wound with the weft thread, is held in place by a rag at the closed end and a wad of raw cotton at the open end. The pirn can be poked out of the shuttle by inserting a long, thin stick into the hole at the closed end. The wad of raw cotton at the open end holds the pirn in the shuttle and also controls the amount of thread which winds off the pirn.

Weaving

An inch of cotton weft is woven and then an inch or so of plain red silk is woven. The weaver continues weaving with a red shuttle even through the white horizontal stripe of the warp. After the white stripe is cleared, the weaver changes from the red shuttle to a white shuttle and weaves a white stripe through the red warp of an equal width to the above mentioned horizontal white stripe. Then the weaver changes back to using the red shuttle and weaves another three-quarters of an inch or so up to the beginning of the *pallu* pattern of the warp.

The warp threads are now adjusted in the following manner. A section of the warp is cut, approximately six inches at a time, where it is attached to the rod which is tied to the clothbeam. Then the warps are pulled one by one from left to right so that the two stripes of white, both warp and weft, exactly coincide with each other (Fig. 26). This procedure adjusts the warp precisely and compensates for any shifting that has occurred, arranging all the warps in perfect alignment.

After a considerable portion of the warp

is adjusted, the warp is pulled forward and the shed stick in the warp is strapped to the clothbeam. The tension is released on the warp and the rest of the warp threads are cut.

Now that the warp threads are aligned, the woven inch of cotton weft and silk warp is attached to the clothbeam rod with a halfhitch stitch across the width of the weaving. The fringes are left free and are trimmed when the patola are cut from the loom.

A starch made of rice water is brushed on the warp. Tension is put back on the loom and the weaving of the patterned *pallu* commences. Patola are always woven in plain weave (tabby). Only in plain weave of equal weight warp and weft threads is there equal visibility of both warp and weft threads. To employ another weave would defeat the purpose of the tie and dye technique since a patterned weave would obscure the design.

During the weaving process two people work at the loom. The person standing at the right operates the shed stick/beater; throws the shuttle from the right, and operates the *lungi* to change the sheds. The person sitting on the left throws the shuttle from left to right. The loom is not horizontal but lies at a slant with the left side lower than the right. Both weavers use a metal pick or stylus, about nine inches long, to clear the shed and to adjust the weaving.

After weaving a few inches, the woven section is rubbed hard, first on top then below, with the edge of a thin smooth steel plate. This removes the starch from the fabric. Then one of the weavers, using one or more of the smooth pointy picks, lines up the threads to perfect the pattern (Fig. 27). This alignment of the warps and wefts is done with a somewhat loosened warp. The weaver adjusts the warp and weft threads to coincide more perfectly by pulling on individual warp threads and at the same time running the tips of the picks down the woven web. The weaver also strokes the web horizontally to adjust the weft threads. Actually this stroking is more like a hard scratch in one direction.

After the warps and wefts are adjusted, and before tightening the warp again to resume weaving, the warp is sprayed with water. The water appears to tighten the loose threads in the warp and to loosen the tight threads, and helps to maintain an even tension.

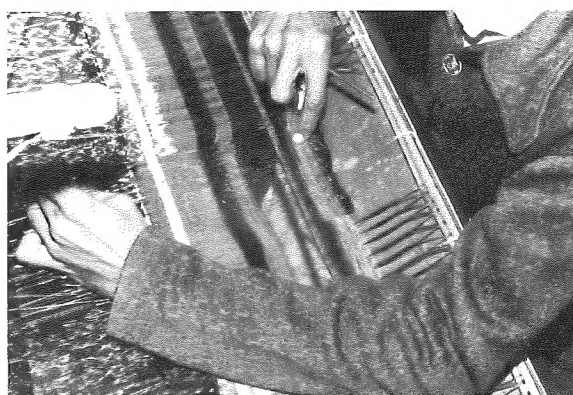


Fig. 26 Adjusting the warp at the beginning of the weaving.

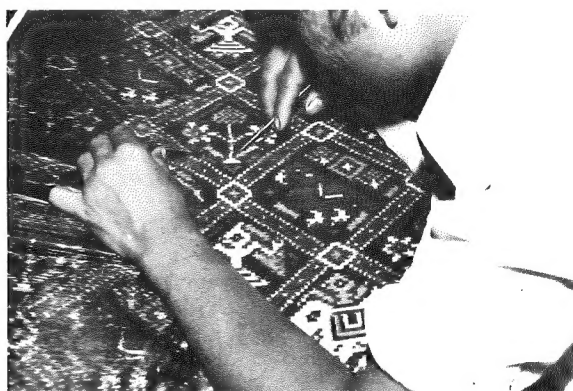


Fig. 27 Lining up the woven warp and weft with a stylus.

When a warp thread breaks it is repaired in the following way. A length of thread of the appropriate design is selected from some scrap yarn saved for this purpose. The weaver finds the break in the warp thread, twists the new section of thread, and joins the two. The thread is then drawn forward and tied around the last woven weft thread, locking it in by beating the wefts in tightly. Later the excess thread is cut off at the tie.

The weavers say they complete from nine to twelve inches of weaving per day.

When taking the patola off the loom, the back poles are first removed—the shed roll, raddle, *lungi*, and tension poles. Then the warp is cut at the end of the woven web (Fig. 28), and the patola are unrolled from the clothbeam. After taking the weaving off the loom, the heddles are taken off the bars and wound onto a *parti* in one continuous element.



Fig. 28 Cutting the patola from the loom. (Notice the bamboo shuttles beside the loom.)



Fig. 29 Chhotal Salvi exhibiting a patolu of the *Nav Ratna Bhat*—nine diamonds—after it has been cut from the loom.

The patolu is a finished product when it is cut from the loom (Fig. 29). Unlike many textiles, there is no need for postloom work or finishing touches.

CONCLUSION

The Salvis are painstakingly meticulous in every respect regarding the process of patolu weaving. They are perfectionists down to the last detail. Their attention and patience with every procedure makes possible the production of such a magnificent textile.

They keep up the patolu tradition because they are proud of their heritage, but patolu weaving does not keep the Salvis solvent. In fact, they subsidize the patolu production through their other occupations which include farming, mashru production, operating a mechanic's garage and a tea stand. Because it is a large family many members who are good weavers must divert their attention to the task of earning a living for the extended family. As the cost of living rises more of them will be forced into other occupations.

NOTES

¹Sir George Watt, *Indian Art at Delhi* (Calcutta: Superintendent of Government Printing, 1903).

²Watt, *op. cit.*

³Denier is a way of defining the fineness of silk and silk-type synthetics. It is a unit expressing the weight in grams of 9000 meters of a filament or yarn.

⁴*Parti*—the term used by the patolu weavers to designate the creel as shown in Figure 1.

⁵"A lease is a formation of the ends of a warp that maintains orderly arrangement of the ends during warping and preparation processes. . . . A lease stick is a stick arranged in the warp (inserted through the 'cross') to maintain the lease."—from *Textile Terms and Definitions*, The Textile Institute, Manchester, 1970.

Photographs are by Anthony De Bone.

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THE FOLLOWING ILLUSTRATIONS ARE DETAILS OF IKATS SHOWING SOME OF THE DESIGN ELEMENTS REMEMBERED BY THE SALVIS.

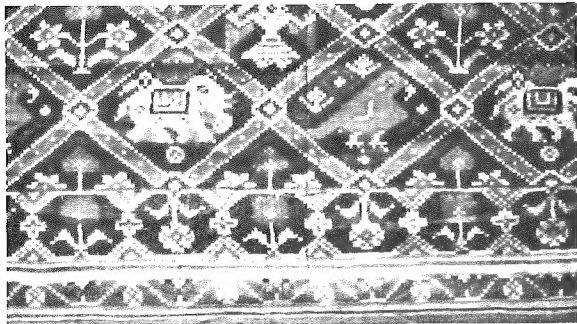


Fig. 30 *Nari-kunjar Bhat*—doll-elephant in a lattice pattern.

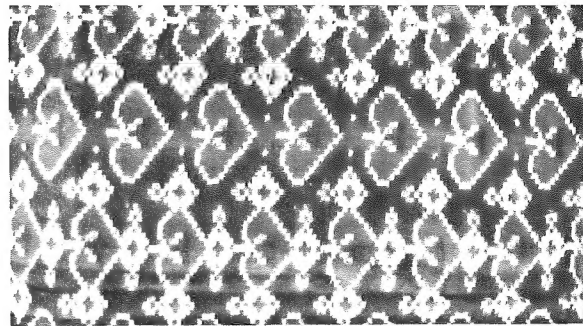


Fig. 31 *Pan Bhat*—pipal leaf design. This motif resembles a heart.

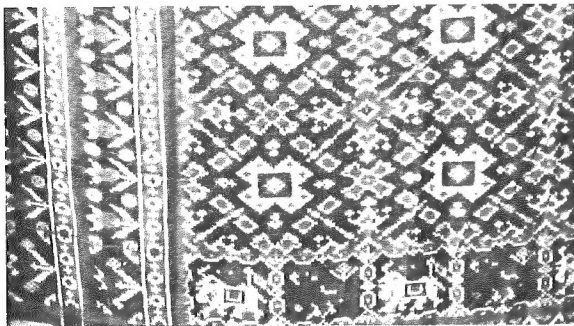


Fig. 32 *Ratan Chowk*—diamond area.

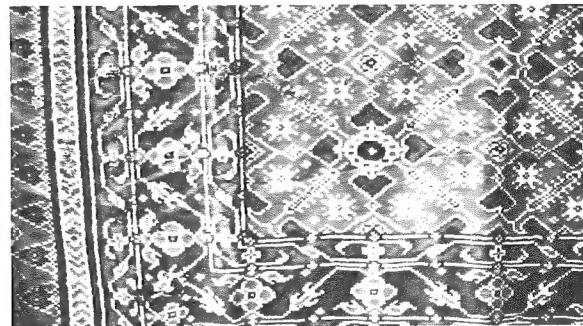


Fig. 33 *Waragaji* (*Wara* is a Muslim caste, *gaji* means pattern. This is a geometric design favored by Muslims.) And a *Undardi Bhat*—mouse design border.)



Fig. 34 *Pilo Galo*—yellow plain—with *Phulwadi Pallu*—floral design—and *Hathi-tota Bhat*—elephant-parrot design. This is a common border motif.

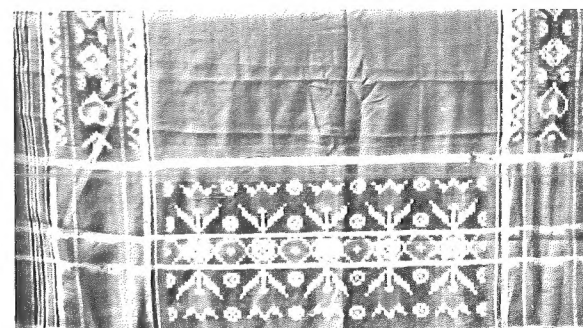


Fig. 35 *Lal Galo*—red plain design.

MARY GOLDEN DE BONE, a weaver, has had her work displayed in various art and craft exhibitions in the San Francisco Bay Area. She has a B.F.A. in Textile Arts from California College of Arts and Crafts and an M.A. in Design from the University of California in Berkeley.

During the academic year 1974-75, Mary De Bone spent some time in Patan living with the patolu weavers and documenting the patolu weaving techniques. This research was sponsored by the University of California Berkeley Professional Studies Program in India. During this period she was affiliated with the All India Handicrafts Board. At present, Mrs. De Bone is living in Iran where she is working in her own weaving studio and is also conducting research on techniques of tribal weavers in the west of Iran.

The photographs illustrating Patolu and Its Techniques were made by the author's husband, Anthony De Bone, during his travels throughout India in 1974-75 on a grant from the University of California Berkeley Professional Studies Program in India.